Heathrow

EASTERLY ALTERNATION INFRASTRUCTURE PROJECT

Environmental Impact Assessment
Environmental Statement, Volume II
Chapter 5: Approach to the EIA

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Heathrow

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5. Approach to the EIA

5.1 Introduction

5.1.1 This Chapter of the Environmental Statement outlines the approach that has been undertaken for the environmental assessment that is documented within this Environmental Statement (**Volumes I** to **IV**). This Chapter details the scope of the assessment including the approach to collection of baseline information, the method for establishing future baseline conditions, how cumulative effects are dealt with, information on mitigation and monitoring, consultation undertaken and the method for establishing an assessment of significance.

5.1.2 This Environmental Statement has been produced in accordance with the EIA Regulations 2017[1], national PPG[2], the Institute of Environmental Management and Assessment (IEMA)'s *Environmental Impact Assessment Guide to: Delivering Quality Development*[3] and guidance specific to the aspects assessed (as listed in **Chapters 6** to **12**).

5.2 EIA Scoping Report

5.2.1 An EIA Scoping Report (**Appendix 1.5: Scoping Report**) was submitted to the local planning authority, the London Borough of Hillingdon (LBH), on 01 November 2023 alongside a request for a formal Scoping Opinion in accordance with Regulation 15(1) of the EIA Regulations 2017[1]. A formal Scoping Opinion was subsequently received from the LBH on 01 February 2024 which is included in **Appendix 1.6: Scoping Opinion**. As part of the LBH's responsibility under Regulation 15(4) of the EIA Regulations 2017[1], a number of organisations were consulted with and responses were received from:

- Environment Agency;
- Natural England;
- National Highways;
- Historic England;
- Greater London Authority;
- London Borough of Hounslow;

[1] HM Government (2017) *The Town and Country Planning (Environmental Impact Assessment) Regulations 2017*. [Online] Available at: https://www.legislation.gov.uk/uksi/2017/571/contents [Accessed: 02 October 2024].

[2] Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local Government (2024) *Planning practice guidance*. [online] Available at: https://www.gov.uk/government/collections/planning-practice-guidance [Accessed: 02 October 2024].

[3] Institute of Environmental Management and Assessment, (2016). *Environmental Impact Assessment Guide to: Delivering Quality Development*. IEMA, UK.

- Buckinghamshire Council;
- Spelthorne Borough Council; and
- Ivers Parish Council.

5.2.2 The EIA Scoping Report (**Appendix 1.5: Scoping Report**) proposed scoping in the following environmental aspects:

- Air quality (**Chapter 6**);
- Noise and vibration (**Chapter 7**);
- People and communities (**Chapter 8**);
- Health (**Chapter 9**);
- Landscape and visual impact assessment (**Chapter 10**);
- Historic environment (**Chapter 11**); and
- Biodiversity (**Chapter 12**).

5.2.3 The Applicant provided a response to the LBH's Scoping Opinion on 03 April 2024, clarifying their position on the Scoping Opinion received and providing response to points raised where appropriate. Further discussion on the scope of the assessment in line with the LBH's Scoping Opinion (**Appendix 1.6: Scoping Opinion**) is provided in **Section 5.3** and relevant technical **Chapters 6** to **12** of the Environmental Statement.

5.3 Scope of the assessment

Aspects scoped into the assessment

5.3.1 The environmental aspects set out in **Section 5.2** have been scoped into the assessment within the Environmental Statement which has considered the requirements of the LBH's Scoping Opinion (**Appendix 1.6: Scoping Opinion**) and describes the likely significant effects of the Proposed Development. **Table 5.1** summarises the Applicant' and the LBH's respective positions on the environmental aspects scoped in to the EIA in line with the LBH's response provided within the Scoping Opinion (**Appendix 1.6: Scoping Opinion**).

Table 5.1 Summary of the aspects scoped in to the assessment

Environmental aspect	Applicant's Position	LBH Position
Air Quality	Scoped in	Agreed
Noise and Vibration	Scoped in	Agreed
People and Communities	Scoped in	Agreed
Health	Scoped in	Agreed
Biodiversity	Scoped in	Agreed

Environmental aspect			Applicant's Position	LBH Position
Environmental aspect	**Applicant's Position**	**LBH Position**	**Justification for scoping in**	
Historic Environment	Scoped in	Scoped out	Considering LBH's Scoping Opinion (**Appendix 1.6: Scoping Opinion**) and other stakeholder scoping responses, **Chapter 11: Historic Environment** has been included in the Environmental Statement. The Applicant agrees that the operational phase effects of the Proposed Development should be scoped out and therefore, these effects have not been included in the assessment. This is based on the Scoping Opinion and a lack of responses to the Scoping Report stating that this is a requirement. The operational impacts on Longford Conservation Area are not anticipated to be significant as the LCA is contained within the historic core of the village, which would not be affected. However, following the review of the supporting scoping response received from Historic England which stated that, "*Heathrow Airport lies in the Heathrow Archaeological Priority Zone, an area of demonstrably high potential for prehistoric and Roman archaeology due to the presence of Neolithic ritual monuments, extensive Bronze Age field systems and settlements and later prehistoric and Roman settlement*", construction effects have been scoped in for further assessment to ensure a precautionary approach to assessment of likely significant effects. Therefore, **Chapter 11: Historic Environment** reports the outcome of the assessment of likely significant effects arising from the Proposed Development upon the historic environment during the construction phase. The Applicant has included this chapter within the Environmental Statement voluntarily to assess: • Disturbance of archaeological remains as a result of construction of new airfield infrastructure (runway access taxiways) and noise barrier; and • Harm to the character of the conservation area and the setting of heritage assets as a result of construction of noise barrier at Longford.	
Landscape and Visual Impact Assessment	Scoped in	Scoped out	Considering LBH's Scoping Opinion (**Appendix 1.6: Scoping Opinion**) and other stakeholder scoping responses, **Chapter 10: Landscape and Visual Impact Assessment** has been included in the Environmental Statement. The Applicant's proposals for the noise barrier include sections ranging in height from 5m up to a maximum of 7m (see **Chapter 3: Description of the Proposed Development**). The design of the noise barrier has been refined since the submission of the Scoping Report in November 2023 which assumed a noise barrier height of up to 5m. Therefore, **Chapter 10: Landscape and Visual Impact Assessment** has been provided to ensure a precautionary approach to the assessment of likely significant effects. The landscape and visual impact assessment focuses on the assessment of:	

Environmental aspect			Applicant's Position	LBH Position
			• Construction plant and equipment at the noise barrier along Wright Way; • The Site compound, parking facilities, and welfare station at the Terminal 5 pod car park; • HGV movements on the Public Right of Way between the concrete batching plant and Wright Way; and • The noise barrier, consisting of timber and Perspex (or equivalent) at a height of 5m and 7m. The following elements have been scoped out from further assessment within the LVIA: • Receptors outwith the ZTV. These receptors would have no view of the noise barrier therefore are scoped out. • Construction and operation effects of other components of the Proposed Development. These proposed works are within the boundaries of the Airport and are unlikely to result in any significant effects. • Decommissioning of the noise barrier. This is scoped out due to the long-term nature of the noise barrier. • Tranquility effects are scoped out as the noise barrier would have no effect on the tranquility experienced by receptors. • Visual assessment of aircrafts visible from the sky. This is scoped out as the change in aircraft overflying the landscape is minor and therefore would not be significant.	

5.3.2 The Scoping Opinion (**Appendix 1.6: Scoping Opinion**) included 'general comments' relating to the LBH's opinion on the methodology under which the EIA should be undertaken. These points (1 to 6) are summarised and responded to in **Table 5.2**.

Table 5.2 General scoping comments received from LBH

Scoping Opinion comment	How is this addressed?
Baseline	
"*For avoidance of doubt, the reasonable worst case scenario should result in the future forecast utilising the permitted cap of 480,000 ATMs. This is regardless of previous trends of not reaching the specific cap and also noting that there are additional movements outside the cap.* *1. 480,000 ATMs should be the threshold for all the relevant assessments.*"	The core assessments detailed within the Environmental Statement have been undertaken using the 2028 forecasts. Where the assessments rely on annualised movements (for example air quality and noise), they have been based on 480,000 ATMs. This is set out in the assumptions used for the EIA in **Table 5.10** in line with the information outlined in **Chapter 2: Heathrow and its Surrounds**.
Future baseline	
"*{T}he Report identifies a solitary future year as the point of assessment and presents no forecasting baseline beyond the opening year:*	During a meeting held with LBH regarding noise on 14 March 2024, the Applicant presented evidence demonstrating that 2028 can be

Scoping Opinion comment	How is this addressed?
Future baseline (without the Proposed Development) – this would be the opening year of the development. No further assessment years are required since the environmental effects associated with the proposals would get no worse and in actual fact are likely to reduce over time as aircraft become cleaner and quieter. As a result, the opening year is considered to be the worst-case year as regards environmental effects. (4.9.2) ***Limiting the assessment year to a single baseline period is likely to generate concerns. Whilst there is general acceptance that aircraft may become cleaner and quieter, the evidence to support this assertion needs to be provided.*** ***The airport is unlikely to look the same in 2033 (5 years after commencement of operation) even allowing for the business as usual model. Whilst there is a cap on ATMs, there isn't on passenger numbers or types of aircraft. The fleet makeup is therefore very important with assumptions made around 2028 needing to be explicitly laid out and a future baseline year should be 'tested' appropriately.*** ***In particular, the impacts on air quality will be inherently linked to passenger numbers and wider impacts around the airport. A large increase in passenger numbers will invariably increase traffic movements around the airport. Whilst this increase might in some way be offset by improvements to emissions from vehicles, it is noted that the air quality targets are also being tightened. Therefore, the future baseline against which the operations are measured is likely to change.*** ***Importantly, no evidence has been presented to suggest that the baseline year for 2028 will be the peak in terms of noise and air pollution around the airport.*** ***2 A future baseline year beyond 2028 should be considered along with an assessment of the passenger demand.*** ***3 Clarification over the passenger forecast should be provided as this is intrinsic to both the fleet composition which relates to the noise envelope of aircraft and the movement of passengers around the airport which is integral to understanding air pollution levels.*****"**	regarded as the year when environmental effects, and in particular noise effects, would be at their worst. LBH requested further evidence to confirm this position. Information demonstrating the rationale as to why, after 2028, it could reasonably be expected that the environmental (and in particular noise and air quality) effects would reduce is provided in **Section 5.6**. Specifically in relation to air quality, the change in Airport-related effects is be considered in the context of future baseline conditions. The future baseline is influenced by improving background concentrations of air pollutants largely associated with reductions in exhaust emissions from road vehicles. Baseline air quality conditions are expected to be higher in 2028 than later years, thus ensuring a worst-case assessment of effects in 2028 compared to, for example, 2030 or 2035. The technical note provided clarification and justification for the forecasts that have been used both to assess the environmental effects of the Proposed Development and also to reach the conclusion that 2028 is the most appropriate assessment year. The future baseline position for the EIA is explained and justified in **Section 5.5** of **Chapter 5: Approach to the EIA**.
Fleet Composition and Airport Operations	
"*The ES will need to include the fleet composition being used in the assessment. The noise and air quality impacts from aircraft are different and therefore the fleet composition is likely to be an important determinant in the assessment. This would best be set out against the most appropriate*	The assessment describes the fleet composition by modelled aircraft type for each of the assessment periods which for noise includes the night-time and will include expected operational requirements in the forecast years. The interpretation of fleet mix for noise modelling

Scoping Opinion comment	How is this addressed?
baseline position (i.e. 2019, the last full operation) with forecasts for how this might change. ***It will also be necessary to set out the specific schedule of activity, the respite periods, the operational expectation related to number of movements and times of day. This must be a reasonable worst case scenario. This will reduce the likelihood of concerns raised during the assessment that the modelled outputs do not reflect what may happen in reality.*** ***4 Confirmation of fleet composition, specific schedule of aircraft movements including night flights, and expected operational requirements in the forecast years.*"**	purposes is shown in **Appendix 7.5: Air Noise** and fleet mix used in air quality modelling is in **Appendix 6.1: Air Quality Modelling Methodology**.
Future developments	
"*It is noted from the Report that the construction activity is likely to be considered minimal and not within the scale that would cause likely significant environmental effects however, it is not clear how it relates to other planned activity at the airport. There is currently resurfacing works being undertaken at the airport with associated construction activity, and there is partial demolition planned for Terminal 1 along with proposals for a new Terminal 2 baggage handling facility. The ES must consider the cumulative impacts of development which in EIA terms is generally considered to be committed development i.e. development with the starting point of being at least 'approved and not yet commenced'.* ***5 The ES should include a programme of planned activity in the context of these proposals to ensure overlaps with any other ongoing works are understood.*"**	Cumulative effects have been considered in line with the approach set out in the EIA Scoping Report (**Appendix 1.5: Scoping Report**) (i.e. existing and approved projects will be considered in the assessment). This also includes the consideration of any of Heathrow's own activities (should there be any) which might overlap with the Proposed Development. This meets the requirements of best practice for EIA. The approach to undertaking the cumulative effects assessment is set out in **Section 5.7** of **Chapter 5: Approach to the EIA**. The findings of the cumulative effects assessment are set out in **Chapter 13: Cumulative Effects**.
"*The ES should also provide clarification on the proposed air space changes being advanced elsewhere and a commentary on how these overlap with these proposals. In particular, the ES should explain how and when these are being assessed cumulatively.* ***6 The ES should include a programme of planned airspace changes and set out the assessment procedure for considering the cumulative changes.*"**	The Applicant has set out within **Chapter 1: Introduction** and **Chapter 2: Heathrow Airport and its Surrounds**. The status of any ACPs that are progressing at the Airport. The EIA does not consider this within the cumulative effects assessment, given these proposals are not far enough advanced to meet the criteria for cumulative effects assessment that is set in the Scoping Report (**Appendix 1.5: Scoping Report**) (as per Recommendation 5).

5.3.3 The additional requirements identified in the Scoping Opinion (**Appendix 1.6: Scoping Opinion**) and how they have been addressed in this Environmental Statement, are addressed further within relevant technical **Chapters 6** to **12** of the Environmental Statement where applicable.

5.3.4 LBH provided the Scoping Opinion with a set of supplementary stakeholder responses which provided additional commentary on the EIA Scoping Report. These additional comments from stakeholders can be incorporated into the EIA at the Applicant's discretion. **Table 5.3** summarises the supporting scoping responses which have been considered in the EIA.

5.3.5 The supporting scoping responses were received from the following stakeholders:

- Buckinghamshire Council;
- Environment Agency;
- Greater London Authority;
- Historic England;
- Ivers Parish Council;
- London Borough of Hounslow;
- National Highways;
- Natural England; and
- Spelthorne Borough Council.

5.3.6 The scope of this assessment is based on the information provided in the Scoping Report and the contents of the Scoping Opinion (**Appendix 1.6: Scoping Opinion**) which was received from LBH on 01 February 2024. Since the submission of the Scoping Report (**Appendix 1.5: Scoping Report**), the Applicant has further refined the design of the Proposed Development (as set out in Section 3.4 in **Chapter 3: Description of the Proposed Development**). However, the design is materially the same as that which was subject to the Scoping Opinion.

5.3.7 As is set out in **Table 5.3**, LBH requested that transport effects relating to the removal of spoil from the new airfield infrastructure component of the Proposed Development should be addressed as part of the EIA. The Proposed Development would lead to, on average 60 HGV movements per day, which are assumed as daily trips to disposal sites. The figures shown in **Table 5.3** are based on DfT traffic counts and demonstrate that the Proposed Development would lead to a minimal impact on the highway network adjacent to Terminal 5.

Table 5.3 Impact of spoil movements on the local road network

DfT Traffic Data (2023)	Total Traffic	HGVs	Total Traffic % Impact	HGV % Impact
A3044 Stanwell Moor Road (2023 data).[4]	18,506	2,290	0.3%	2.7%
A3113 Airport Way (2023 data).[5]	34,245	3,163	0.2%	2.0 %
B467 Swakeleys Road (2009 data). Access to Thames Materials.[6]	28,119	1,098	2.2%	5.4%
A4 London Road (2023 data). Access to Biffa Waste Management.[7]	17,036	2,073	0.4%	3%
A412 Denham Road (2023 data). Access to New Denham Quarry.[8]	28,042	1,988	0.2%	3.1%

5.3.8 Whilst the IEMA Environmental Assessment of Traffic and Movement (2023) guidance9 does note that the thresholds for assessment should not be used to determine impacts on driver delay or road safety, the increases shown to occur from the Proposed Development are minor and demonstrate that there would likely be no material impact on network operation. The roads listed in **Table 5.3** are already existing HGV routes to aggregate sites and so are designed to cater for large volumes of HGV traffic.

[4] Department for Transport, (2023). *Road traffic statistics*. [online] Available at: Road traffic statistics - Manual count point: 47625 (dft.gov.uk) [Accessed: 02 October 2024].

[5] Department for Transport, (2023). *Road traffic statistics*. [online] Available at: Road traffic statistics - Manual count point: 88085 (dft.gov.uk) [Accessed: 02 October 2024].

[6] Department for Transport, (2009). *Road traffic statistics*. [online] Available at: Road traffic statistics - Manual count point: 942669 (dft.gov.uk) [Accessed: 02 October 2024].

[7] Department for Transport, (2023). *Road traffic statistics*. [online] Available at: Road traffic statistics - Manual count point: 78344 (dft.gov.uk) [Accessed: 02 October 2024].

[8] Department for Transport (2023) *Road traffic statistics*. [online] Available at: Road traffic statistics - Manual count point: 57029 (dft.gov.uk) [Accessed: 02 October 2024].

[9] Institute of Environmental Management and Assessment (IEMA) (2023). *Environmental Assessment of Traffic and Movement*.

Aspects scoped out of the assessment

5.3.9 The Scoping Report (**Appendix 1.5: Scoping Report**) concluded that several aspects should be scoped out of the EIA as significant effects are unlikely. **Table 5.4** identifies these aspects and provides a short justification for why these aspects have been scoped out, for full justification please refer to within EIA Scoping Report (**Appendix 1.6: Scoping Opinion**).

5.3.10 The Scoping Opinion from the LBH (**Appendix 1.6: Scoping Opinion**) confirmed that the aspects listed in **Table 5.4** should be scoped out of the EIA.

Table 5.4 Aspect and elements scoped out of the assessment

Aspect	Applicant Position	Applicant's rationale	LBH Position	LBH Comment (Appendix 1.6)	How is this addressed?
Land quality	Scoped out	Based on the review of land contamination data sources, no significant land contamination risk is anticipated to be present in the Proposed Development footprint. It is noted that the Proposed Development is expected to have limited potential to introduce new contaminant pathways to human health or controlled water receptors during the construction or operational phase of works (it is assumed that construction and maintenance workers will utilise appropriate personal protective equipment (PPE) and health and safety best practice as required).	Agreed	No comments to add to the findings of the Report	Scoped out.
Major accidents and disasters (MA&Ds)	Scoped out	The Proposed Development does not introduce any new receptors which will be significantly exposed to the risk of MA&Ds. Furthermore, the construction workforce will be adequately briefed on all relevant risks prior to the start of operation. The Proposed Development is anticipated to present a generally low risk of leading to a major accident and does not introduce any significant new sources or types of major accidents. The Applicant has well developed	Agreed	No comments to add to the findings of the Report	Scoped out.

Aspect	Applicant Position	Applicant's rationale	LBH Position	LBH Comment (Appendix 1.6)	How is this addressed?
		procedures for managing risk associated with construction works and minor airfield changes.			
Traffic and transport	Scoped out	Consideration of each of the following likely effects has led to the conclusion that they are not likely to be significant and hence do not require further assessment: • Increased traffic (including HGVs) during construction on the local road network resulting in such things as driver delay, an increase in accidents, and effects on severance, pedestrian delay, and pedestrian amenity; • Daily HGV movements related to the construction phase would be very limited, construction is for a short period on an existing busy road, and materials will be sourced locally where possible. Other traffic will mainly be associated with the small numbers of construction workers driving to the Proposed Development area. It is therefore not anticipated that the increase in traffic flows will exceed 10% and thus effects on traffic and transport at the construction stage are scoped out of the detailed assessment; • Increased traffic (including HGVs) following the implementation of the Proposed	Agreed	Details on HGVs have not yet been provided but the impacts on the network is unlikely to be significant. Matters relating to air quality are considered elsewhere. Transport impacts will still need to be addressed as a material planning matters through a subsequent planning application.	Details of the approximate HGV movements associated with the Proposed Development are included in **Chapter 3: Description of the Proposed Development** of this ES. Further detail is also provided within the **Construction Environmental Management Plan**. Consideration of air quality impacts associated with traffic movements are included in **Chapter 6: Air Quality**.

Aspect	Applicant Position	Applicant's rationale	LBH Position	LBH Comment (Appendix 1.6)	How is this addressed?
		Development on the local road network resulting in such things as driver delay, an increase in accidents, and effects on severance, pedestrian delay, and pedestrian amenity; and There will be no change to traffic numbers resulting from the implementation of the Proposed Development.			
Waste management	Scoped out	Due to the nature and scale of the Proposed Development, the proposals are not likely to generate a significant amount of waste during the construction and operational phase. Any waste that is generated would be re-used on Site if not elsewhere suitable within the grounds of the Airport. It is therefore anticipated only a small volume of waste (if any) would be transported off Site to local waste management facilities or final disposal.	Agreed	No comments to add to the findings of the Report	Scoped out
Wake vortex strikes	Scoped out	The Applicant has a vortex protection scheme to protect and repair homes around the Airport. If a home has been damaged by a vortex strike, the Applicant will repair it. The incidence of additional vortex strikes due to the Proposed Development is unlikely to be significant. A Vortex Statement is provided in **Appendix 2.1: Wave Vortex Statement**.	Agreed	Whilst the topic can be scoped out, London Borough of Hounslow has raised matters relating to increased impacts from the new operations and advise it should be Scoped In. However,	Scoped out

Aspect	Applicant Position	Applicant's rationale	LBH Position	LBH Comment (Appendix 1.6)	How is this addressed?
				no evidence on the rationale for this is provided. LBH Scoping Opinion agreed it can be scoped out. Notwithstanding that, this will be a material planning matter and a commentary on the increased risk of vortex strikes, alongside likely locations will be required in the planning submission. Mitigation and action plans to reduce any identified harm will also be expected.	
Greenhouse gas and climate change	Scoped out	In accordance with IEMA guidance for GHG assessments, activities that do not significantly change the result of the assessment can be excluded where expected emissions are less than 1% of total emissions. As emissions from the pre-construction stage are expected to minimal and as they will be largely associated with the supply chain (and therefore considered in the carbon footprint of supplier companies), it is considered that GHG	Agreed	It is accepted that Aviation and Climate Change are controversial matters, however, based on the facts presented in the submission, there is no reason to believe	A **Whole Life Carbon Assessment Report** is provided alongside the planning application.

Aspect	Applicant Position	Applicant's rationale	LBH Position	LBH Comment (Appendix 1.6)	How is this addressed?
		emissions related to the pre-construction stage are not likely to be significant and have been scoped out of the assessment. Emissions from the construction of the Proposed Development have been scoped out as they are relatively limited in nature and are temporary. This includes the transportation of construction materials and resources to the works site, the operation of construction machinery, ground works, landscaping and permanent works, waste management and workforce commuting. The Proposed Development infrastructure itself will produce not produce any emissions during its operation as there are no heating apparatus or similar installed systems associated with the Proposed Development. It is not anticipated that the Proposed Development will have a material increase on the Airport's maintenance operations. It is not anticipated that the activities associated with utilisation of the Proposed Development during the use stage as there is no increase in the number of annual aircraft movements. The Proposed Development will be in use for the duration of the Applicant's future operation of the Airport's operation, with no discernible end date. Therefore, decommissioning has been scoped out.		the impacts of the proposals would result in a likely significant climate change effect. The proposals do not result in a higher level of ATMs and therefore the level of impact would be commensurate with that. Identifying no likely significant effects is not to say there won't be any effects. A planning application will need to consider this material planning matter through the submission.	

Aspect	Applicant Position	Applicant's rationale	LBH Position	LBH Comment (Appendix 1.6)	How is this addressed?
		Heathrow Airport's Climate Change Adaptation Report[10] includes details of the current and future climate risks at the airport. Given the scope of the proposed works, the existing baseline and efforts to ensure climate change resilience, Climate Change Resilience was scoped out of detailed consideration in the EIA. A **Whole Life Carbon Assessment** is provided as part of this application**.**			
Hydrology and hydrogeology	Scoped out	Effects on groundwater: The Proposed Development does not include excavations or structures that could give rise to a likely significant effect on groundwater flows beneath the Airport as intrusive groundworks are anticipated to be approximately 1.5m to 2m deep. The vulnerability of the Airport to groundwater flooding would not alter as part of the Proposed Development. As a result, it is proposed to scope out likely significant effects on groundwater from further consideration in the EIA. Effects on Thames Water sewer network and local wastewater treatment with respect to foul capacity: The Proposed Development would not result in any	Agreed	There will be an increase in hardstanding although this will be a negligible in the context of water runoff and flood risk. The subsequent planning application will need to demonstrate an appropriate drainage strategy though, along with details of	A **Flood Risk Assessment** is provided as part of the Planning Application.

[10] Heathrow Airport Limited (2022), Climate Change Adaptation Report – Third Road Progress Report [online]. Available at: https://www.heathrow.com/content/dam/heathrow/web/common/documents/company/heathrow-2-0-sustainability/futher-reading/Heathrow%20Airport%20CCAR%202021%20FINAL.pdf [Accessed: 02 October 2024].

Aspect	Applicant Position	Applicant's rationale	LBH Position	LBH Comment (Appendix 1.6)	How is this addressed?
		increases in foul discharge. During construction it is anticipated that existing welfare facilities would be utilised. As a result, it is proposed scope out likely significant effects on foul sewerage capacity from further consideration in the EIA. Effects on Thames Water network with regards to potable water: The Proposed Development would not result in any increases in potable water demand. During construction, there will likely be some minor increase in demand however this would be on a temporary basis and is considered unlikely to have an effect on the existing infrastructure. As a result, it is proposed to scope out likely significant effects on potable water capacity from further consideration in the EIA.		water quality protection; presumably the additional hardstanding will result in an increase in de-icer to be used. De-icer is contaminant so the subsequent planning submission will need to demonstrate existing arrangements will accommodate the changes.	

5.4 Approach to consultation and engagement

5.4.1 The Applicant undertook technical consultation and community engagement activities prior to submission of the Planning Application as outlined in this section. The outcome of the consultation and engagement are outlined in specific technical **Chapters 6** to **12** of the Environmental Statement where relevant.

Technical consultation

5.4.2 As part of the EIA process, technical consultation with a range of statutory and non-statutory consultees has been undertaken. Details of the technical consultation undertaken for each aspect is provided in the respective aspect **Chapters 6** to **12** of the Environmental Statement. The following technical consultation was undertaken:

- The Applicant submitted a Scoping Report on 01 November 2023 (see **Appendix 1.5: Scoping Report**) and LBH provided a Scoping Opinion in February 2024 (see **Appendix 1.6: Scoping Opinion**) in line with the EIA Regulations 2017;
- In addition to the request for an EIA Scoping Opinion, the Applicant has engaged with officers from LBH on the planning application since June 2023. Regular meetings were held with LBH to update progress of the application, as well as provide additional information on specific technical aspects including noise (14 August 2023 and 14 March 2024) and air quality (04 March 2024 and 21 May 2024);
- Pre-application engagement meetings with the Greater London Authority (GLA) held 30 November 2024 and 14 December 2023; and
- Technical consultation and engagement with the Lead Flood Agency (LFA) and Environment Agency regarding:
    - The Proposed Development approach to flood risk on the airfield;
    - the location and construction of the noise barrier in proximity to the Duke of Northumberland's River; and
    - confirmation that the noise barrier would not displace floodwater.

5.4.3 Further information is provided in the **Statement of Community Involvement Report** submitted with the Planning Application.

Community engagement

5.4.4 The EIA has also been informed through public engagement with residents, businesses and other interested parties through a letter drop. 279 residential households and 30 businesses in Longford received a letter (see **Appendix 5.1: Longford Engagement Letter and Survey**) which provided information on the Proposed Development and requested comments on the proposed design of the noise barrier. The letter drop provided residents and businesses with information about the Proposed Development and why it is necessary. Information included the way in which operation at the Airport affected noise in Longford and design concepts for the noise barrier. The letter included an option to participate in a survey for residents and businesses to feedback their opinions on the aesthetic design of

the noise barrier. The letter and survey are available in **Appendix 5.1: Longford Engagement Letter and Survey**. Discussions and issues raised throughout the application have been recorded and published in a Statement of Community Involvement which has been submitted alongside the Planning Application. Changes to the design of the Proposed Development as a result of engagement is summarised in **Table 5.6**. The following community engagement has been undertaken

- A letter drop, online survey (ended 31 January 2024) and door knocking exercise to survey the opinions of residents of the residents of Longford with regard to the design of the noise barrier;
- A post-card drop (September 2024) to help residents and businesses understand the need and preferred design of the Proposed Development;
- In person engagement events in the local area held between 11 to 19 September 2024 (as set out in **Table 5.5**); and
- Email and social media engagement to inform the public about the Proposed Development.

Table 5.5 In person engagement events

Location	Date	Time
Isleworth Public Hall	Tuesday 10 September	16:00 - 20:00
Southall - Havelock Family Centre	Wednesday 11 September	12:00 - 17:00
Longford - Thistle Hotel	Thursday 12 September	15:00 - 20:00
Cranford Community College	Saturday 14 September	10:00 - 14:00
Stanwell Moor Village Hall	Tuesday 17 September	13:00 - 17:00
Old Windsor Memorial Hall	Wednesday 18 September	10:00 - 14:00
Longford - Thistle Hotel	Thursday 19 September	16:00 - 20:00

5.4.5 Further information is provided in the **Statement of Community Involvement Report** submitted with the Planning Application.

Approach to addressing feedback on the Proposed Development

5.4.6 In response to comments received through the consultation and engagement and as part of the iterative EIA process, the Applicant has made several changes to the Proposed Development as set out in the EIA Scoping Report. These changes are set out in **Table 5.6**.

5.4.7 The Applicant took the approach to commit to addressing stakeholders' concerns where practicable within the Proposed Development. This meant positively responding to issues

raised and formulating a suitable resolution which could be included within the planning application. Consideration of these changes have been taken into account within the Environmental Statement this identified within **Table 5.6**.

Table 5.6 Changes to Proposed Development

Change to the Proposed Development	Commentary
Extension of the noise barrier	In response to ground noise modelling, the noise barrier was further extended to the north east corner of the Heathrow Terminal 5 POD car park.
Increase of height of noise barrier to 7m at appropriate sections	In response to ground noise modelling and feedback from the local community in Longford (**Appendix 5.1: Longford Engagement Letter and Survey**), the height of the noise barrier was raised from 5m to 7m along certain stretches of its length.
Transparent materials to be utilised in the design of the noise barrier.	As outlined in **Chapter 3: Description of the Proposed Development**, the noise barrier would be constructed with the lowest 3 m constructed from timber and the upper 2-4 m being transparent (for the 5m and 7m sections respectively). The transparent material would likely be Perspex (or equivalent) and would allow views to the airfield from Longford to be maintained in line with feedback received from the local community (**Appendix 5.1: Longford Engagement Letter and Survey**). The transparent section of the noise barrier will also have measures included on it to reduce the likelihood of bird strike.

5.5 Defining the Study Area

5.5.1 The Study Area for each technical assessment depends on the nature of the likely significant effects and the location of receptors which could be affected. The geographical scope was determined using professional judgement and further informed by specific guidance and consultation with stakeholders. Each technical aspect chapter (**Chapters 6** to **12**) of this Environmental Statement sets out the agreed Study Area for their respective aspect.

5.6 Approach to establishing a baseline for assessment

Current state of the environment

5.6.1 Baseline information (environmental characteristics and conditions) has been collated, based upon surveys undertaken and desk-based information available at the time of the assessment. Much of the information collected to support the Heathrow Expansion Project (HEP) application between 2017 and 2019 remains relevant and has been used for the purposes of this Environmental Statement. Where aspects have used this information, due reference will be made in their chapter accordingly. Technical aspect chapters (**Chapters 6** to **12)** provide details of the baseline information collected and a summary is provided in **Chapter 2: Heathrow Airport and its Surrounds** within this Environmental Statement. Any limitations establishing the baseline are described in technical aspect chapters (**Chapters 6** to **12**).

5.6.2 The baseline conditions for the purpose of the Environmental Statement are outlined in each of the environmental aspect chapters (**Chapters 6** to **12**). There are slight variances across the Environmental Statement depending on the use of existing data obtained through other sources and the dates when surveys were undertaken, which represent baseline scenarios. This has been clearly outlined within technical aspect chapters (**Chapters 6** to **12**).

5.6.3 The dates of surveys and the dates when data sources have been accessed are provided within technical aspect chapters (**Chapters 6** to **12**)and have been agreed with London Borough of Hillingdon through the scoping process and consultation where appropriate.

Future baseline and assessment years

5.6.4 Schedule 4(3) of the EIA Regulations[1] requires an outline of the likely evolution of the current state of the environment (baseline scenario) without implementation of the Proposed Development, as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge. A description of the baseline and future baseline conditions relating to the environmental aspects which have been scoped into this assessment is provided in each of the respective **Chapters 6** to **12** within this Environmental Statement.

5.6.5 The consideration of future baseline conditions has taken into account the range of factors as far as these are known at the time of undertaking the assessment. These include climate change, trends in population size of protected species, changes in socioeconomic conditions and trends in air quality. In particular, for this application, consideration has been paid to future trends in aviation factors including likely changes in fleet forecasts and aircraft evolving environmental performance. Much more is said about this later in this section.

5.6.6 For the Proposed Development, the 'baseline' is described as the current state of the environment based on how the Airport operates today, including all current Airport operations (see assumptions set out in **Table 5.10**. The future baseline (without the Proposed Development) is the opening year of the development, 2028. No further assessment years are required since the environmental effects associated with the aspects which are scoped into the assessment would get no worse than that which occur in the opening year.

Fleet forecasting

5.6.7 A key action in establishing the future baseline for 2028 has been to develop robust 'fleet forecasts', these being Heathrow's view on what aircraft will be using the Airport in 2028. These are required to support a number of environmental assessments including noise, carbon and air quality. Heathrow has a robust method for establishing its fleet forecasts and generates long-term annual demand forecasts and future peak day flight schedules to support long-term business planning i.e. enabling the Heathrow community to plan their activities and tailor their resources in accordance with the expected demand.

5.6.8 The peak day flight schedules are developed using a bottom-up approach considering Heathrow's existing schedule, airline growth aspirations and airline fleet plans. The output is validated using top-down analysis of long-term aviation demand and reviewed by independent industry experts.

5.6.9 The current summer peak day flight schedule is used as a basis of the forecast and is overlayed with bottom-up analysis. The bottom-up analysis utilises intelligence gained from airline partners on their growth aspirations, future fleet plans and network strategies. Heathrow works with incumbent airlines and prospective new entrants to understand future slot requirements and potential for slot trades or leases. Analysis of the current fleet is used to forecast retirement and replacement profiles, incorporating airline fleet order books and current aircraft delivery projections. Finally, assumptions are cross-checked against external future fleet trends and industry forecasts.

5.6.10 Schedules developed from the bottom-up analysis are validated against long-term aviation demand forecasts. The long-term annual demand forecasts are developed from top-down econometric modelling which forecasts propensity to fly using external industry expert GDP per capita and population forecasts. These are combined with fare forecasts which incorporate future carbon policy, reflecting the costs of transiting to net zero including the uptake of alternative fuel types and carbon pricing. The long-term aviation demand is used to validate assumptions on market growth and the evolution of the peak day flight schedule. Of course, any fleet forecast produced has to reflect that, as a result of the Terminal 5 planning permission, Heathrow is required to operate within an Air Traffic Movements (ATMs) limit of 480,000 and comply with a noise contour restriction of 57 dB $L_{Aeq,16hr}$ at 147 km^2. Heathrow is currently operating at over 98% of the ATM limit indicating that there is very little, if any, opportunity for growth in terms of movements because it would be impossible for the Airport to operate at 100% capacity given this is affected by things out of Heathrow's control such as delays and cancellations caused by adverse weather etc.

5.6.11 This constrained environment is considered when developing forecasts and therefore growth is largely driven by capacity and the size of aircraft. Although this is governed by the airline and route operating each slot, the capacity is ultimately determined by aircraft type, size, age and configuration.

5.6.12 Given all this, the Applicant is confident that the fleet forecasts used for the future baseline in 2028 are robust and represent the likely case given everything that is currently known.

Historic and future noise and air emissions performance

5.6.13 The assessment made, that is documented within this ES, with regard to operation (i.e. not construction), is based upon a single assessment year, this being 2028. This, the first full year of full runway alternation when operating on easterlies becomes operational, is used because it is considered that this represents the likely worst case assessment scenario for environmental effects.

5.6.14 Forecasting aircraft activity is inherently more difficult the further into the future being considered. A range of factors influence the aviation sector including, in particular, the economic environment and people's propensity to fly. As such, and to ensure that 2028 can confidently be assumed to be the likely worst case assessment year for environmental effects, a review has been undertaken of the profile of the Airport's historic noise and air emissions performance. Furthermore, consideration has also been paid to what is likely to happen in the future, in particular immediately post 2028.

Noise

5.6.15 A review has been undertaken of aircraft noise trends at Heathrow over the period 2003-2019. 2003 was chosen as it coincided with the publication of the UK Government's Aviation White Paper 'The Future of Air Transport'. This set out a framework for the future development of air transport over a 30 year period and did so whilst considering the environmental effects of aviation including the impact of aircraft noise. It also noted that aircraft in 2003 were typically 75 per cent quieter than jets of the 1960s. Having this review go back further than this would therefore only reinforce the pattern of progressively quieter aircraft.

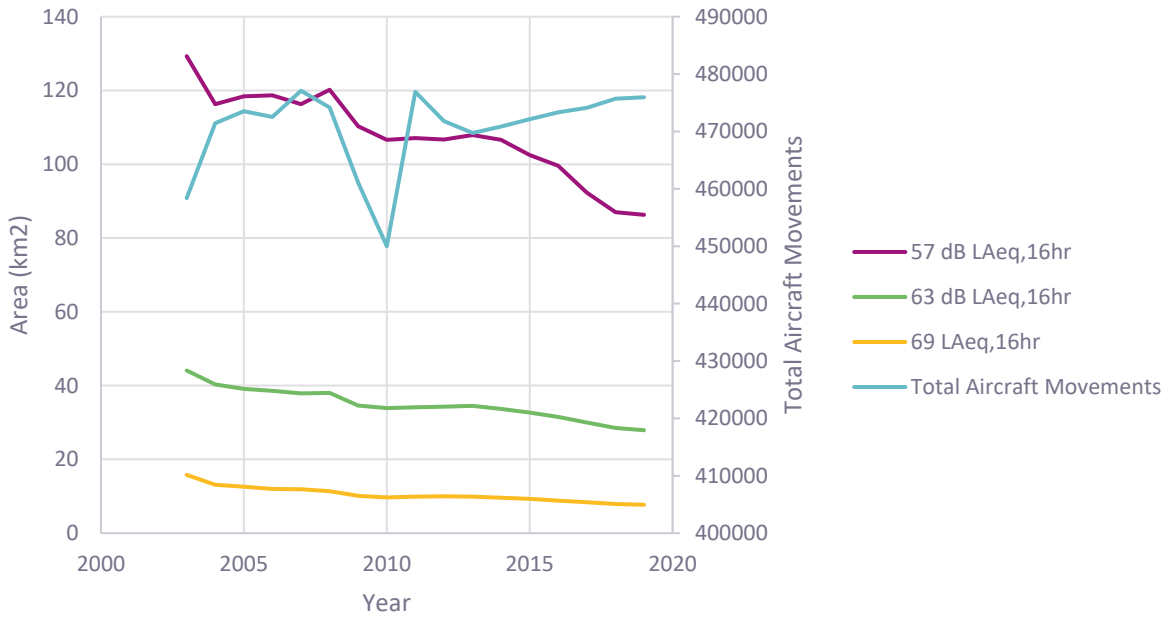
5.6.16 2019 has been chosen as the final review year because this was the last full calendar year of Heathrow operations before the COVID-19 pandemic occurred, which had the effect of reducing significantly the numbers of aircraft that flew from Heathrow. Although flight numbers have recovered substantially since the end of pandemic, they are still not at the point where they could be considered to be unaffected (although numbers are likely to have recovered such that they achieve 2019 levels in 2024).

5.6.17 During the review period there has been a significant increase in passenger numbers – from 63 million passengers per annum (mppa) in 2003 to just under 81 mppa in 2019. There has also been a consistent upward trend in the number of annual flights arriving at, or departing from, Heathrow during the review period – Air Traffic Movements have increased over this period by 14,409 from 463,650 to 478,059. Proportionally, though, it can be seen that the increase in passengers is much larger than the increase in Air Traffic Movements. This is in part because the average size of aircraft increased during the review period meaning that each aircraft carried on average more passengers.

5.6.18 Notwithstanding this growth, Heathrow's noise output has fallen. When considering the 57 LAeq,16hr metric, there has been a reduction in the area of this contour, of 40.6 km^2 from 126.9 km^2 to 86.3 km^2. This represents a drop of approximately 36%.

5.6.19 At higher noise levels the change is even more marked, with the area of the 69 LAeq,16hr contour having reduced by approximately 50%. As the figure below shows, this improvement has been progressive and continuous.

Graphic 5.1 – Areas of various noise contours and total aircraft movements at Heathrow Airport, 2003 - 2019



5.6.20 This demonstrates that from 2003 to 2019 aircraft modernisation in combination with other noise reduction initiatives at Heathrow significantly reduced noise exposure from aviation activities.

5.6.21 Over the period 2024 to 2028, and in line with Heathrow's Noise Action Plan, aircraft noise is expected to continue to reduce due to further fleet modernisation. Actions 1B and 1C of the Noise Action Plan 2024 – 2028 set targets in relation to this. To help achieve this, Heathrow has a suite of noise management policies in place which encourage this trend. These include differential landing charges which incentivise quieter aircraft to operate from the Airport. As a result, and also because more generally there is a natural need for airlines to replace aging aircraft, further fleet modernisation at Heathrow is expected to occur over the period of the NAP coinciding with the 2028 assessment year.

5.6.22 The International Civil Aviation Organization (ICAO) Independent Expert Noise Technology Review[11] has estimated that further technological improvement will result in improvements of around 0.1 to 0.3 dB per year in the noise output of new generation aircraft (0.1 dB being the lower bound of this improvement rate) when considering the periods up to 2027 and 2037. Given the constraint of Heathrow's 480,000 aircraft movement cap, it is therefore reasonable to expect that noise will continue to decrease beyond the assessment year of 2028.

Air Quality

5.6.23 A review has also been undertaken of the trajectory of emissions to the air during the same period. It is more difficult to quantify reductions in air emissions than those associated with

[11] Civil Aviation Organisation (ICAO) (2019). Independent Expert Integrated Technology Goals Assessment and Review for Engines and Aircraft (Doc 10127). Montreal, 2019.

noise. Air emissions tend to disperse widely as aircraft climb and so on the ground monitoring becomes of little relevance. However, it is known that despite a small increase in ATMs and also increased passenger numbers, emissions from Heathrow's operations have reduced, both in absolute terms and per passenger in the recent past. This is demonstrated by monitoring data taken on the airfield which shows that in the period from 2015 to 2019, NO2 concentration (µg/m3) have fallen from 44.2 to 42.5. These reductions in emissions have been largely associated with aircraft technology improvements driven by increased stringency in emissions regulations and requirements to reduce fuel consumption.

5.6.24 This steady downward trend in emissions is forecast to continue beyond the assessment year of 2028. ICAO commissioned a review of the likely trends in emissions which determined that, as a result of technology and operational improvements there should be, roughly, a 28% reduction in NO_x emissions from international aviation during the period 2010 to 2050. Such benefits will certainly be seen at Heathrow[12].

5.6.25 At the same time, policies and actions to reduce emissions of air pollutants nationally, internationally and locally have seen a trend of improving air quality at the air quality monitoring stations across the UK, including around Heathrow Airport. Such is predicted to continue with the UK Government forecasting, in their Defra background maps, a reduction of around 4 µg/m3 in annual mean NO2 between 2019 and 2028. More is said about this in **Chapter 6.** Given all this, it is considered that the assessment year of 2028 provides a worst-case assessment as one can be confident that baseline concentrations of air pollutants in 2028 will be higher than in future years.

5.6.26 For these reasons, considering 2028 to be the year in which there are to be the likely worst case environmental effects, is robust. Using 2028 as the assessment year for this application means that forecast effects represent a cautious, worst case.

5.7 Approach to mitigation and monitoring

Mitigation

5.7.1 Regulation 18(3)(c) of the EIA Regulations[1] requires an Environmental Statement to include "*a description of any features of the proposed development, or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment…*".

5.7.2 Paragraph 7 of Schedule 4 to the EIA Regulations provides further specification of the information on mitigation measures to be included in an Environmental Statement:

> "*A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements (for example the preparation*

[12] International Civil Aviation Organization (ICAO), (n.d.). *Trends in Emissions that affect Climate Change*. [Online] Available at: https://www.icao.int/environmental-protection/Pages/ClimateChange_Trends.aspx#:~:text=Trends%20in%20Aircraft%20Fuel%20Burn%20and%20CO%202 [Accessed 02 October 2024].

of a post-project analysis). That description should explain the extent, to which significant adverse effects on the environment are avoided, prevented, reduced or offset, and should cover both the construction and operational phases."

5.7.3 EIA is an iterative process and opportunities for mitigation, referred to as 'embedded environmental measures' have been considered throughout the design development of the Proposed Development and in the assessments undertaken in this Environmental Statement where likely significant effects have been identified. Where possible, these measures have been developed with input from key stakeholders together with appropriate technical standards, policies, and guidance.

5.7.4 These embedded environmental measures include both avoidance, best practice, and design commitments, which are classified into primary or tertiary measures in accordance with the Institute of Environmental Management and Assessment (IEMA) '*Environmental Impact Assessment Guide to: Delivering Quality Development*'[13] definitions and set out in **Graphic 5-1**. Good practice consideration and application of environmental measures involves a hierarchal approach, considering avoidance of negative effects as the primary objective.

5.7.5 The assessments reported in the Environmental Statement identify the embedded environmental measures proposed to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment.

Monitoring

5.7.6 Regulation 26(1) of the EIA Regulations 2017[1] require when determining an application and if the case is relevant, the planning authority must consider whether it is appropriate to impose monitoring measures if permission is to be granted. Regulation 26(1) states:

"*(d) if planning permission or subsequent consent is to be granted, consider whether it is appropriate to impose monitoring measures.*" [1]

5.7.7 Regulation 26(3) states:

"*When considering whether to impose a monitoring measure under paragraph (1)(d), the relevant planning authority, the Secretary of State or inspector, as appropriate, must—*

(a) if monitoring is considered to be appropriate, consider whether to make provision for potential remedial action;

(b) take steps to ensure that the type of parameters to be monitored and the duration of the monitoring are proportionate to the nature, location and size of the proposed development and the significance of its effects on the environment; and

(c) consider, in order to avoid duplication of monitoring, whether any existing monitoring arrangements carried out in accordance with an obligation under the law

[13] Institute of Environmental Management and Assessment (IEMA), (2016). '*Environmental Impact Assessment Guide to: Delivering Quality Development*'.

of any part of the United Kingdom, other than under the Directive, are more appropriate than imposing a monitoring measure." [1]

5.7.8 Schedule 4(7) of the EIA Regulations 2017 states:

"*A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements (for example the preparation of a post-project analysis).*" [1]

5.7.9 Paragraph 063 of the PPG[2] advises:

"*If planning permission or subsequent consent is to be granted, the local planning authority or Secretary of State must consider whether it is appropriate to impose monitoring measures (regulation 26).*

Local planning authorities should bear in mind that existing monitoring arrangements under other regulatory regimes may be used if appropriate, with a view to avoiding duplication. In all cases, authorities should ensure that all measures are proportionate to the nature, location and size of the relevant project and its effects on the environment.

Monitoring should not be used as a general means of gathering environmental information; rather it is a means of monitoring, where appropriate, any mitigating measures identified through the Environmental Impact Assessment process."[14]

5.7.10 Each respective aspect Chapter of this Environmental Statement sets out in detail monitoring arrangements where these are proposed as set out.

5.7.11 The mechanism by which the measures are to be secured and implemented and the party responsible for their delivery is also recorded where appropriate.

5.8 Approach to the assessment of significance

5.8.1 The classification of each effect identified has been assessed. As a general rule, this assessment is based on the magnitude of change (or impact) due to the Proposed Development and the sensitivity/value/importance of the affected receptor to change, as well as a number of other factors that are outlined in more detail in **Paragraph 5.8.2**. The classification of residual effects has been assessed with regard to the extent to which additional mitigation measures will avoid, prevent, reduce or, if possible, offset adverse effects.

5.8.2 The assessments presented in technical **Chapters 6** to **12** of the Environmental Statement have taken into account a number of matters to determine whether or not the likely effects are significant. Wherever possible and appropriate, the effects have been assessed

[14] Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local Government (2020) *Planning practice guidance – Environmental Impact Assessment*. [online] Available at: https://www.gov.uk/guidance/environmental-impact-assessment [Accessed: 02 October 2024].

quantitatively. As a general rule, the following matters have been taken into account when classifying the likely effects:

- Relevant legislation and planning policy;
- Relevant topic specific guidance and assessment criteria;
- International, national, regional and local standards;
- Likelihood of occurrence of the effect;
- Geographical extent of effect;
- Sensitivity, value and/or importance of the receptor;
- Magnitude and complexity of impact;
- Whether the effect is temporary or permanent;
- Duration (short, medium or long-term), frequency and reversibility of effect;
- Whether the effect is direct or indirect, secondary or transboundary;
- Inter-relationship between different effects (both cumulatively and in terms of likely effect interactions); and
- The outcomes of consultations.

5.8.3 Where aspect specific methodology deviates from this approach, for example as a result of following aspect specific guidance, this is set out in the methodology section of the technical Chapters.

Sensitivity of receptors

5.8.4 The sensitivity of receptors and their susceptibility to change is considered within this Environmental Statement and are identified within the aspect **Chapters 6** to **12** . These have been classified negligible, low, medium, high or very high by professional judgement according to the receptors' quality, value, rarity or importance where information is available and appropriate. For certain assessment areas, guidance can be taken from value attributed to elements through designation or protection under law (e.g., ecological resources given various levels of protection under law). This is demonstrated in **Table 5.7**.

Table 5.7 Environmental sensitivity definitions

Environmental sensitivity of receptor/resource	Typical description
Very High	Very high importance and rarity, international scale and very limited potential for substitution.
High	High importance and rarity, national scale, and limited potential for substitution.
Medium	Medium importance and rarity, regional scale, limited potential for substitution.
Low	Low importance and rarity, local scale.
Very low	Very low importance and rarity, local scale.

Magnitude of change

5.8.5 The magnitude of change (impact) is predicted as a deviation from the established baseline conditions, as a result of the Proposed Development. The magnitude of these changes is also further defined within the relevant technical **Chapters 6** to **12** and has been determined where available and appropriate by quantifiable data, available appropriate national and international standards or limits (World Health Organisation (WHO) Limits, European Union (EU) Quality Standards, etc.) and professional judgement.

5.8.6 The magnitude of change identified is based on the peak potential magnitude of change, i.e. the greatest likely magnitude of change that may be experienced by a sensitive receptor (existing or proposed). Magnitude of change is evaluated in accordance with the definitions set out in **Table 5.8** as tailored to each of the assessments reported in this Environmental Statement.

Table 5.8 Definitions of magnitude of change

Magnitude of change		Typical description
Very high	Adverse	Complete loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features or elements.
	Beneficial	Very high or substantial improvement of resource quality; extensive restoration; major improvement of attribute quality.
High	Adverse	Loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features or elements.
	Beneficial	Large improvement of resource quality; extensive restoration; large improvement of attribute quality.
Medium	Adverse	Loss of resource, but not adversely affecting the integrity; partial loss of/damage to key characteristics, features or elements.
	Beneficial	Benefit to, or addition of, key characteristics, features or elements; improvement of attribute quality.
Low	Adverse	Some measurable change in attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements.
	Beneficial	Minor benefit to, or addition of, one (maybe more) key characteristics, features or elements; some beneficial impact on attribute or a reduced risk of negative impact occurring.
Very low	Adverse	Very minor loss or detrimental alteration to one or more characteristics, features or elements.
	Beneficial	Very minor benefit to or positive addition of one or more characteristics, features or elements.
No change		No loss or alteration of characteristics, features or elements; no observable impact in either direction.

Significance criteria

5.8.7 The determination of significance is derived with reference to information about the nature of the development, the receptors that could be significantly affected and their sensitivity or value, together with the magnitudes of change that are likely to occur.

5.8.8 Other than for environmental aspects for which significance evaluation does not involve the use of matrices, sensitivity or value and the characteristics of environmental changes can be combined using a matrix (see **Table 5.9**). In addition, professional judgement is applied because, for certain environmental aspects, the lines between the sensitivities or magnitudes of change may not be clearly defined and the resulting assessment conclusions may need clarifying.

5.8.9 Definitions of how the categories that are used in the matrix are derived for each aspect are also set out in each environmental aspect section, along with the relevant explanation and descriptions of receptor sensitivity, magnitude of change and levels of effect that are considered significant in terms of the EIA Regulations 2017[1]

5.8.10 Within the matrix in **Table 5.9**, reference is made to:

- Major effects, which will always be determined as being ‘Significant’ in EIA terms;

- Moderate effects that are 'Potentially Significant' which may include effects likely to be 'Significant', or 'Not Significant' based on specific scenarios and professional judgement; and
- Minor or Negligible effects, which will always be determined as 'Not Significant'.

Table 5.9 Significance Matrix

		Magnitude of change				
		Very high	**High**	**Medium**	**Low**	**Very low**
Sensitivity/importance/value	**Very high**	Major (**Significant**)	Major (**Significant**)	Major (**Significant**)	Major (**Significant**)	Moderate (**Potentially significant**)
	High	Major (**Significant**)	Major (**Significant**)	Major (**Significant**)	Moderate (**Potentially significant**)	Minor (**Not significant**)
	Medium	Major (**Significant**)	Major (Significant)	Moderate (**Potentially significant**)	Minor (**Not significant**)	Negligible (**Not significant**)
	Low	Major (**Significant**)	Moderate (**Potentially significant**)	Minor (**Not significant**)	Negligible (**Not significant**)	Negligible (**Not significant**)
	Very low	Moderate (**Potentially significant**)	Minor (**Not significant**)	Negligible (**Not significant**)	Negligible (**Not significant**)	Negligible (**Not significant**)

Classifying effects

5.8.11 Effects deemed to be significant for the purpose of assessment are those which are described as '**major**' when considered against Guidelines for Environmental Impact Assessment (2004): IEMA[15]. In addition, '**moderate**' effects can also be deemed as significant. Whether they do so, this has been determined by a qualitative analysis of the specific impact to the environment that is identified using professional judgement. How significance has been determined is detailed within each of the aspects' assessments of the Environmental Statement as appropriate.

5.8.12 The terms listed below are used in the Environmental Statement, unless otherwise stated within individual sections, to classify effects as:

[15] Institute of Environmental Management and Assessment, (2004). *Guidelines for environmental impact assessment*.

- **Major beneficial or adverse effect** – effects at this level are likely to be material in the decision- making process;
- **Moderate beneficial or adverse effect** – effects at this level can be considered to be material decision-making factors;
- **Minor beneficial or adverse effect** – effects at this level are not material in the decision-making process; and
- **Negligible** – no effects or those that are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error.

5.8.13 The evaluation of the significance of an effect is important in determining the resources that should be applied in avoiding or mitigating an adverse impact or the actual value of a positive impact.

5.8.14 The methodology for assessing significance was outlined as part of the scoping process and takes into consideration relevant guidance and regulations including:

- Guidelines for Environmental Impact Assessment[16];
- Special Report – The State of Environmental Impact Assessment in the UK - Delivering Proportionate EIA: A Collaborative Strategy for Enhancing UK Environmental Impact Assessment Practice[17];
- Environmental Impact Assessment Guide to: Delivering Quality Development[3]; and
- Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal[18].

5.8.15 Tables summarising the likely significant effects associated with each aspect, required mitigation measures and residual effects are provided at the end of each technical Chapter. The tables provide a clear distinction of the type of effect:

- Beneficial or adverse;
- Permanent or temporary;
- Direct or indirect;
- Short, medium or long-term;
- Secondary or cumulative; and
- Significant or not significant.

[16] IEMA, (2004). *Guidelines for Environmental Impact Assessment*.

[17] IEMA, (2017). *Special Report – The State of Environmental Impact Assessment in the UK*.

[18] Chartered Institute of Ecology and Environmental Management, (2022). *Guidelines For Ecological Impact Assessment In The UK And Ireland: Terrestrial, Freshwater, Coastal and Marine*. [online] Available at: https://cieem.net/wp-content/uploads/2018/08/ECIA-Guidelines-2018-Terrestrial-Freshwater-Coastal-and-Marine-V1.2-April-22-Compressed.pdf [Accessed: 02 October 2024].

5.8.16 In terms of the duration of an effect, short-term has been considered as up to 2 years, a medium-term effect has been considered to be between 2 and 4 years in duration and a long-term effect has been considered to be greater than 4 years in duration. Any variation to these definitions arising, for example, from differences in assessment methodology or guidance is explained in technical **Chapters 6** to **12** of the Environmental Statement.

5.9 Approach to the assessment of cumulative effects

5.9.1 Schedule 4(5)(e) of the EIA Regulations[1] states that the Environmental Statement should include a description of the likely significant effects of the development on the environment resulting from:

> "*[T]he cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources.*"

5.9.2 For the purposes of this Environmental Statement, the following types of cumulative effects have been considered:

- **Intra-project combined effects**: These are the interaction and combination of different residual (post-mitigation) environmental effects of the Proposed Development affecting the same receptor; and
- **Inter-project cumulative effects:** These are the combined residual (post-mitigation) environmental effects of the Proposed Development with other committed projects affecting the same receptor.

5.9.3 As set out in the EIA Scoping Report, a cumulative effects assessment has been undertaken as part of this planning application. The assessment is presented in technical **Chapter 13: Cumulative Effects**.

Methodology of assessing intra-project cumulative effects

5.9.4 The assessment of intra-project effects is the consideration of likely effects that could arise from two or more aspects in combination on the same Receptor. This may be relevant to establishing the full effect of the Proposed Development on individual receptors.

5.9.5 There is no standard approach to the assessment of intra-project effects, although it is carried out with reference to guidance and professional judgement. The approach followed for the assessment follows a three-step receptor-based approach:

- Step A – Screening of sensitive receptors;
- Step B – Determine the common receptors residual effects; and
- Step C – Assessment of intra-project effects.

5.9.6 Further detail is provided in **Chapter 13: Cumulative Effects**.

Methodology of assessing inter-project cumulative effects

5.9.7 Inter-project effects are the combined effects of the Proposed Development on a common receptor together with other developments. Inter-project effects have been reported within each aspect Chapter of the Environmental Statement and are summarised in **Chapter 13: Cumulative Effects**. It broadly follows the Planning Inspectorate's Advice Note Seventeen[19] which follows a systematic approach to undertaking a cumulative effects assessment. The assessment of inter-project effects is split into four distinct phases. These are:

- Stage 1: Establish the Zone of Influence (ZoI) of the scheme and identify long list of 'other developments';
- Stage 2: Identify short list of 'other developments';
- Stage 3: Information gathering; and
- Stage 4: Assessment.

5.9.8 Further detail is provided in **Chapter 13: Cumulative Effects**.

5.10 Assumptions which inform the Assessment

5.10.1 There are a number of key Airport operational assumptions are set out in **Table 5.10** which remain unchanged since the scoping exercise was undertaken (**Appendix 1.5: Scoping Report**). These assumptions informed the aspect-specific assessment work (in particular the noise and air quality assessments).

Table 5.10 Assumptions used for the purposes of the EIA

Assumptions for Assessment Purposes	
ATM cap	The EIA assumes that the ATM cap will remain at 480,000 per annum (pa).
Westerly preference	The EIA assumes that westerly preference will continue to form part of standard operating procedures. When winds are light (below 5 knots) the rules set by UK Government determine the direction of operations. This is called a "directional preference". At the Airport, when winds are light a 'westerly preference' is operated. This means that even during periods of light easterly winds aircraft will continue to land in a westerly direction, making their final approach over London. This was introduced in the 1960s to reduce the number of aircraft taking off in an easterly direction over London, the most heavily populated side of the Airport.

[19] Planning Inspectorate, (2015). *Nationally Significant Infrastructure Projects - Advice Note Seventeen: cumulative effects assessment relevant to nationally significant infrastructure projects*. [online] Available at: https://www.gov.uk/government/publications/nationally-significant-infrastructure-projects-advice-note-seventeen-cumulative-effects-assessment-relevant-to-nationally-significant-infrastructur [Accessed: 02 October 2024].

Assumptions for Assessment Purposes	
Maintain runway alternation at 3pm each day	The EIA assumes that the Airport will maintain runway alternation at 3pm each day in line with its current published patterns. The EIA assumes that runway alternation would take place when the Airport is on easterly operations as well as on westerly operations.
Airspace redesign as part of UK's Airspace Modernisation Strategy	The EIA assumes that the existing airspace will be used to inform the assessment.
Noise Preferential Routes (NPRs)	The EIA assumes that the published flight paths, including the SIDs and associated NPRs, will remain unchanged.
Landing out of Alternation	The EIA assumes that Landing out of Alternation during easterly operations will remain as it does today.
Segregated mode	The EIA assumes that the Airport operates in 'segregated mode' where one runway is designated for arrivals and the other designated for departures

5.11 Difficulties and Uncertainties

5.11.1 Schedule 4(6) of the EIA Regulations[1] states that an Environmental Statement should include "*…details of difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required information and the main uncertainties involved…*". Where difficulties and uncertainties have been encountered whilst undertaking the work to inform this Environmental Statement, these are identified in technical **Chapters 6** to **12**.

5.12 Coordinated Assessment with Habitats Regulations Assessment

5.12.1 Whilst the over-arching objectives of EIA and Habitats Regulations Assessment (HRA) are similar, the scope, level of detail and terminology used varies. As such, these processes have been undertaken separately. However, the scope presented within this Environmental Statement has been developed to ensure that the needs of these processes have been considered to ensure a coordinated assessment complaint with Regulation 27 of the EIA Regulations[1].

5.12.2 The Habitats Directive (92/43/EEC)[21] and transposing UK Regulations (The Conservation of Offshore Marine Habitats and Species Regulations 2017)[20] requires consenting authorities to decide whether or not a project may have a significant effect on a Natura 2000

[20] HM Government, (2017). *The Conservation of Offshore Marine Habitats and Species Regulations 2017*. [online] Available at: https://www.legislation.gov.uk/uksi/2017/1013/contents [Accessed: 02 October 2024].

site[21] This process is known as HRA. The overarching aim of HRA is to determine, in view of a site's conservation objectives and qualifying interests, whether a plan, either in isolation and/or in-combination with other plans or projects, is likely to have a significant effect on the integrity of a Natura 2000 ecological site.

5.12.3 Due to the proximity of the Airport to European designated sites and the potential for likely significant effects posed by the Proposed Development, HRA is required as the Proposed Development has the capacity to result in likely significant effects on a number of designated features located within the general vicinity of the Airport. Likely significant effects were identified for eight European sites:

- South West London Waterbodies Special Protection Area (SPA);
- South West London Waterbodies Ramsar site;
- Windsor Forest and Great Park Special Area of Conservation (SAC);
- Richmond Park SAC;
- Wimbledon Common SAC;
- Burnham Beeches SAC;
- Thursley, Ash, Pirbright and Chobham SAC; and
- Thames Basin Heaths SPA.

5.12.4 **Appendix 12.1: Report to Inform Appropriate Assessment, Volume III** of the Environmental Statement provides LBH with the information necessary to enable compliance with duties under Regulation 63 of the Conservation of Habitats and Species Regulations 2017 (as amended).

[21] European Commission, (1992). *Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora*. [Online] Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A01992L0043-20130701 [Accessed: 02 October 2024].